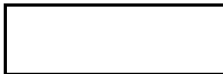


Approved For Release 2004/07/29 : CIA-RDP78B04770A000200010055-01967


RECEIPT IS ACKNOWLEDGED FOR THE FOLLOWING MATERIAL LISTED BELOW:



PROGRESS REPORT FOR MAY 1967
Cys, 3, 4, and 5 of 7 cys dtd dtd 6/7/67

Date



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Copy 4 - 07017
Copy 5 -  Bookcase

Declass Review by NGA.

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25X1

Copy 3 of 7

7 June 1967

25X1

Subject: May Progress Report, [REDACTED]

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1. This project is divided into three different activity areas: (1) Distortion Feedback Servo Loop Stability, (2) Registration Correction Accuracy, (3) Image Dissector Scan Distortion. Work has progressed on item one so that approximately 20% of the work is completed, while on item two approximately 23% of the work is completed. No activity has yet occurred on item three because it is directly dependent upon items of project [REDACTED] which are scheduled for completion later.

25X1

Servo Loop Stab.

1.1 Technical Progress: During May the programs which were originally written for the Digital Mapping System scanner tests were resurrected and cleaned up. Several sections of the program which are not needed in the present work were omitted, and several other sections were updated. A tabulation of the remaining sections and the purpose of each has been written.

The program in its present state will cause a pair of rasters (which can be distorted under programmer command) to be fed to the precision scanner tube. The position of one raster remains fixed, while the other can be stepped in x and y. The initial positions and the size and number of steps are under programmer command.

The photomultiplier tube provides inputs to the peak and valley circuitry (initially built for DMS, rebuilt and tested in April). The program analyzes the P/V inputs and sums x and y parallax, scale, and skew counts. These counts, plotted against raster position can be displayed on the PDP-1 cathode ray tube.

GROUP 1

Excluded from automatic downgrading and declassification

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25X1

Copy 3 of 7

7 June 1967

A flow diagram of the program to simulate closing of the servo loops has been written during May. This program will operate on the stored parallax, scale, and skew counts to insert correcting data into the initial set-up registers. Some progress on the detail programming has been made.

Registration Accuracy

1.2 Technical Progress: A projection type floating ~~mark~~ ^{mark} system has been installed in the EROS unit. This is accomplished by one fixed projector and one movable projector. The movable projector is mounted on a precision stage whose position can be read directly to 10^{-4} inches in x and y and is operated by large knobs on the front of the EROS unit. The fixed floating mark is projected into the left ocular which observes the fixed stage, while the moving floating mark is projected into the right ocular which observes the right, movable stage (in parallax). This position for insertion of the floating mark is different than the original plan which was based on usual stereo comparator practice of installing the mark at the first relay image plane (for maximum rigidity). The marks have been moved to a position where they are optically superimposed on the flying spot scanner tube of the correlator; in this way the behavior of the correlator can be directly related to the floating mark system independently of zero order errors introduced by motions of the distortion correction optics.

A set of plates of a western test range has been found which contains mountains, plains and cities in a single 9 by 9 frame. Coverage of the same area is available in several scales and in vertical and convergent material. Duplicate plates are also available for initial system calibration. We believe these plates to be particularly suitable for our immediate purposes.

2. Next Month:

2.1 During June, we hope to finish the program to close the servo loop and make some initial tests. The area for further investigation will be the section which operates on the stored counts to produce correcting data. Several alternatives are available, and starting with the simplest first, we would like to investigate as many as seem feasible.

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- 3 -



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Copy 3 of 7

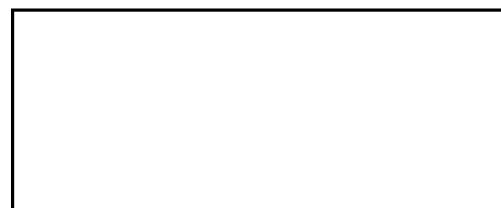
7 June 1967

2.2 The above mentioned plates will be analyzed for spatial frequency content and calibration of the EROS correlator will begin. The results obtained will, in a large measure, determine the course of the remaining experiments.

2.3 Activity will begin.

3. Pending, unresolved technical problems; none.
4. Pending, unresolved contractual problems; none.
5. No agreements of record.
6. No proposed changes.
7. No unanswered or unresolved matters.

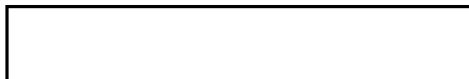
Sincerely,



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Project Manager

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Next 2 Page(s) In Document Exempt